

WHAT IS CLAIMED IS:

1. A software controlled data replacement system for
a cache, the system employing a memory region and associated
class identifier and a tag replacement control indicia,
5 comprising:

a replacement management table, employable to read the
class identifier to create the tag replacement control
indicia, wherein the class identifier is created by
software; and

10 the cache, comprising a plurality of sets, employable
to disable a replacement of at least one of the plurality of
sets as a function of the tag replacement control indicia.

2. The system of Claim 1, wherein the memory region
15 and associated class identifier creation software further
comprises compiler or operating system software.

3. The system of Claim 1, wherein a set of the cache
is replaced based upon a least recently used function.
20

4. The system of Claim 1, wherein the replacement
management table uses software.

5. The system of Claim 4, wherein class identifier
25 creation software is employable to classify an address range
as a default address range.

6. The system of Claim 1, wherein the cache comprises
a translation lookaside buffer.
30

7. The system of Claim 4, wherein class identifier generation software further comprises a direct memory access command.

5 8. A method of determining information replacement in a cache, comprising:

creating a class identifier by class identifier creation software;

reading the class identifier;

10 creating a tag replacement control indicia as a function of the class identifier through employment of a replacement management table; and

configuring replacement eligibility of a set in a cache as a function of the associated tag replacement control
15 indicia.

9. The method of Claim 8, wherein the step of creating a tag replacement control indicia further comprises employing a software-managed replacement management table.

20

10. The method of Claim 8, further comprising replacing information within the set of the cache with other information as a function of the tag replacement control indicia.

25

11. The method of Claim 8, wherein creating a classID further comprises creating a non-default classID if a hit of an address occurs in class identifier generation software.

30 12. The method of Claim 8, further comprising discarding the tag replacement control indicia if there is a hit on the cache.

13. The method of Claim 8, further comprising the step of retrieving the data associated with an address from the second cache if there is a hit in the second cache.

5

14. The method of Claim 8, further comprising replacing a set based upon a least recently used function.

15. The method of Claim 8, further comprising
10 employing an address range to associate with the class identifier.

16. The method of Claim 8, further comprising
15 employing an algorithm bit to select an algorithm for the replacement of the eligible set.

17. The method of Claim 8, wherein a default classID is generated by the hardware if a software generated classID is not provided.

20

18. A computer program product for determining information replacement in a cache, the computer program product having a medium with a computer program embodied thereon, the computer program comprising:

25 computer code for creating a class identifier by class identifier generation software;

computer code for reading the class identifier;

computer code for creating a tag replacement control indicia as a function of the class identifier through
30 employment of a replacement management table; and

computer code for configuring replacement eligibility of a set in a cache as a function of the associated tag replacement control indicia.

5 19. The computer program product of Claim 18, further comprising computer code for replacing information within the set of the cache with other information as a function of the tag replacement control indicia.

10 20. The computer program product of Claim 18, wherein software for creating a classID further comprises creating a non-default classID if a hit of an address occurs in the software.

15 21. A processor for determining information replacement in a cache, the processor including a computer program comprising:

computer code for creating a class identifier by class identifier generation software;

20 computer code for reading the class identifier;

computer code for creating a tag replacement control indicia as a function of the class identifier through employment of a replacement management table; and

25 computer code for configuring replacement eligibility of a set in a cache as a function of the associated tag replacement control indicia.